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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,452	12/20/2004	Takahiro Furutani	0020-5330PUS1	7850
2292 7590 09/11/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER SHOSHO, CALLIE E	
			ART UNIT 1714	PAPER NUMBER
			NOTIFICATION DATE 09/11/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/518,452

Applicant(s)

FURUTANI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8,9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding rejections are except for those described below are overcome by applicants' amendment filed 6/15/07.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Objections**

2. Claims 8-9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

(a) Claim 8, which depends on claim 1, recites "wherein said organic solvent having a boiling point of at least 150 °C is a polar solvent", while claim 1 has been amended to recite that the organic solvent having boiling point of at least 150 °C "is selected from the group consisting of a monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol". Thus, claim 8 fails to further limit the scope of the claim on which it depends, namely claim 1, given that claim 8 is broader than claim 1. That is, while claim 1 is limited to specific organic solvent having a boiling point of at least 150 °C that is selected from the group consisting of a monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol, claim 8 broadly encompasses all solvents having boiling point of at least 150 °C that are polar solvents which encompasses

solvents other than monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol.

(b) Claim 9, which depends on claim 1, recites “wherein said organic solvent having a boiling point of at least 150 °C is an ether solvent”, while claim 1 has been amended to recite that the organic solvent having boiling point of at least 150 °C “is selected from the group consisting of a monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol”. Thus, claim 9 fails to further limit the scope of the claim on which it depends, namely claim 1, given that claim 9 is broader than claim 1. That is, while claim 1 is limited to specific organic solvent having a boiling point of at least 150 °C that is selected from the group consisting of a monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol, claim 9 broadly encompasses all solvents having boiling point of at least 150 °C that are ether solvents which encompasses solvents other than monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2, 4-5, 8-9, and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 has been amended to recite “wherein said organic solvent is selected from the group consisting of a monoalkyl ether monoalkyl ester derivative of (poly)alkylene glycol and a dialkyl ester derivative of (poly)alkylene glycol”. The scope of the claim is confusing given that it is not clear what is meant by “derivative” or what types of organic solvents are encompassed by this phrase.

It is noted that the above rejection was previously set forth in paragraph 2 of the office action mailed 3/15/07 against claim 10. Given that the limitation of claim 10 has been inserted into claim 1 by applicants’ amendment filed 6/15/07, the above rejection is now given against present claim 1.

Applicants argue that the above cited claim language is proper given that applicants are allowed to be their own lexicographers and cite MPEP 2173.01 and MPEP 2173.02.

However, while it is agreed that applicants are entitled to be their own lexicographer, as set forth in MPEP 2111.01 IV “an applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning(s)”. It is further noted that “when a patentee acts as own lexicographer in redefining the meaning of particular terms away from their ordinary meaning, he must clearly express that intent in the written description”.

However, applicants have not set forth a definition of the term “derivative” and have not defined the meaning of “derivative” in the present specification and thus, the boundaries of the subject matter for which protection is sought is not clear. The phrase “derivative” has not been defined with reasonable clarity, deliberateness, and preciseness.

**Claim Rejections - 35 USC § 103**

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-2, 4, 8-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (U.S. 5,980,624) in view of *Hawley's Condensed Chemical Dictionary* and Suzuki et al. (U.S. 6,245,832).

Ichikawa discloses oil-based ink comprising 20-95% ester solvent such as ethylene glycol ethyl ether acetate, 5-33% pigment, and 1-20% styrene-acrylic acid copolymer, i.e. water-insoluble acrylic resin having a hydrophobic group, i.e. styrene, and acidic group, i.e. acrylic acid (col.1, lines 5-8, col.2, line 66-col.3, line 1, col.3, lines 17-28 and 47-51, col.4, lines 65-66, col.5, lines 16-17, 29, and 40-51, and col.6, line 42). It is well known, as evidenced by *Hawley's Condensed Chemical Dictionary* (page 470), that ethylene glycol ethyl ether acetate has boiling point of 156.3 °C.

The difference between Ichikawa and the present claimed invention is the requirement in the claims of acid value and molecular weight of the acrylic resin, i.e. styrene-acrylic acid copolymer.

Suzuki et al., which is drawn to ink jet ink, disclose the use of styrene-acrylic acid copolymer possessing acid value of 200-500, weight average molecular weight of 3,000-15,000, and molecular weight distribution, i.e. weight average molecular weight/number average molecular weight, of 1-2.5. It is disclosed that if the acid value is lower, there is deteriorated stability while if the acid value is higher, there is poor water resistance or low image density. It is further disclosed that if the molecular weight distribution exceeds 2.5, the viscosity increases or the dispersion is unstable (col.4, lines 13-14 and 35-42).

In light of the motivation for using styrene-acrylic acid copolymer with specific molecular weight and acid value disclosed by Suzuki et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use styrene-acrylic acid copolymer with such acid value and molecular weight in Ichikawa in order to produce stable ink with suitable viscosity, good water resistance, and good image density, and thereby arrive at the claimed invention.

7. Claims 1-2, 8-9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/556619 in view of Zhu et al. (U.S. 6,251,175) and Ohta et al. (U.S. 5,954,866).

The rejection is adequately set forth in paragraph 11 of the office action mailed 3/15/07 and is incorporated here by reference.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/556619 in view of Zhu et al. and Ohta et al. as applied to claims 1-2, 8-9, and 11-12 above, and further in view of Suzuki et al. (U.S. 6,245,832).

The rejection is adequately set forth in paragraph 12 of the office action mailed 3/15/07 and is incorporated here by reference.

**Response to Arguments**

9. Applicants' arguments regarding Doshi (U.S. 2005/0272833), Kiguchi et al. (U.S. 6,627,364), and JP 07-109431 have been fully considered but they are moot in view of the discontinuation of the use of these resins against the present claims.

10. Applicants' arguments filed 6/15/07 have been fully considered but, with the exception of arguments relating to Doshi, Kiguchi et al., and JP 07-109431, they are not persuasive.

Specifically, applicants argue that while WO 09/556619 and Ichikawa each disclose some solvents which may be relevant to the present invention, neither reference suggest the anti-grazing properties of printed materials with the ink composition.

However, while there is no explicit disclosure in WO 02/556619 or Ichikawa that the printed images have antigrazing properties given that WO 02/556619 in combination with Zhu et al. and Ohta et al. and Ichikawa in combination with Suzuki et al. disclose ink as presently claimed, it is clear that such ink would intrinsically possess such antigrazing properties. Further, it is noted that there is no requirement in the present claims regarding antigrazing properties.

Applicants argue that Suzuki et al., Zhu et al., and Ohta et al. are not relevant references against the present claims given that none of the references teach solvent as presently claimed. It is agreed that none of Suzuki et al., Zhu et al. or Ohta et al. disclose solvent as presently claimed. However, note that while Suzuki et al., Zhu et al., and Ohta et al. each do not disclose



all the features of the present claimed invention, Suzuki et al., Zhu et al., and Ohta et al. are each used as a teaching reference, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references each teach a certain concept, namely, specific acrylic resin utilized in ink jet inks, and in combination with the primary reference, discloses the presently claimed invention.

Applicants also argue that the effects of the present invention can only be achieved when ink composition meets all the requirements of present claim 1, i.e. organic solvent having boiling point of at least 150 °C, resin having acidic group that is water-soluble acrylic resin having hydrophobic group and acid value of 10-200 mg KOH/g wherein the organic solvent is selected from the group consisting of monoalkyl ether monoalkyl ester derivative of polyalkylene glycol and dialkyl ester derivative of polyalkylene glycol. As evidence to support the criticality of the presently claimed invention, applicants filed 1.132 declaration on 6/15/07.

The declaration compares ink within the scope of the present claims, i.e. comprising acrylic resin as presently claimed as well as organic solvent as presently claimed with ink outside the scope of the present claims, i.e. comprising polyester resin instead of acrylic resin and solvent outside the scope of the present claims (Ink F), comprising acrylic with acid value outside the scope of the present claims (Ink G), comprising acrylic resin with molecular weight outside the scope of the present claims (Ink H), comprising amount of acrylic resin outside the

scope of the present claims (Ink I), comprising solvent with boiling point outside the scope of the present claims (Ink J), and comprising polyester (Ink K).

It is shown that ink of present invention is superior in terms of antigrazing, sliding properties, and /or drying.

However, with respect to WO 02/556619, it is noted that WO 02/556619 already recognizes the criticality of using solvent with boiling point of at least 150 °C. Attention is drawn to col.4, lines 33-36 of WO 02/556619 that discloses the use of solvent having boiling point of 150 °C or higher and col.5, lines 31-33 of WO 02/556619 that discloses that it is preferred to use organic solvent with boiling point of 200 °C or higher.

Additionally, it is noted that the data is not persuasive given that there the data is not commensurate in scope with the scope of the present claims given that there is only data at a few values of acid number. There is no data at the lower, middle, or upper end of the presently claimed range of acid value. As set forth in MPEP 716.02(d), whether unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support". In other words, the showing of unexpected results must be reviewed to see if the results occurred over the entire claimed range, *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Applicants have not provided data to show that the unexpected results do in fact occur over the entire claimed range of acid value. Similarly, the data is not persuasive given that the data is not commensurate in scope with the scope of the present claims given that there is only data at two values of boiling point, i.e. at 247 °C and 270 °C. There is no data at the lower end of the presently claimed range of boiling point.

Additionally, the data is not commensurate in scope with the scope of the “closest” prior art. Specifically, the data set forth in the 1.132 declaration compares ink comprising acrylic resin within the scope of the present claims, i.e. comprising acid value of 65, 77, or 24, with ink outside the scope of the present claims, i.e. comprising acrylic resin with acid value of 0.

However, it is noted that Suzuki et al. teach acrylic resin possessing acid value of 200-500 while Zhu et al. teach acrylic resin with acid value of 238. Thus, not only does the comparative ink G fall outside the scope of the present claims, but also outside the scope of the “closest” prior art Suzuki et al. and Zhu et al. The acid value disclosed by the prior art is closer to that presently claimed than the acid values of the comparative examples.

Similarly, the data set forth in the 1.132 declaration comprises ink comprising acrylic resin as presently claimed with in the scope of the present claims with ink comprising polyester which is outside the scope of the present claims. However, there is no disclosure in Ichikawa of polyester resin. Thus, not only is the data outside the scope of the present claims but also outside the scope of the prior art.

### **Conclusion**

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

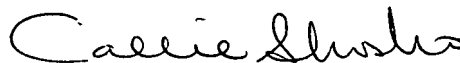
MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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9/2/07